Tidal Wetland Monitoring Project Work Team

Full PWT Meeting Agenda

Date: Wednesday, August 16, 2017
Time: 9am - noon
Location: DWR room 119
3500 Industrial Blvd, West Sacramento, CA 95691
Conference Line: (916) 574-2556

CDFW- Stacy Sherman, Rosie Hartman, Dave Contreras, Ryan Kok, Sunny Lee, Rob McLean, Phillip Poirier (phone), Shruti Khanna, Melissa Riley, Hildie Spautz
DWR – Ted Sommer, Gardner Jones, Louise Conrad, Pascale Goertler, Dan Riordan, Rhiannon Mulligan (phone), Jamie Suria (phone), Anitra Pawley, Eric Lobochefsky, Otome Lindsey (phone), Patty Finfrock
USGS – Larry Brown, Dave Ayers, Matt Young, Isa Woo
DSP – Maggie Christman, Karen Kayfetz
SWFCA – Kelsey Cowin, Laura Valoppi
SFEI – April Robinson (phone)
MWD – Shawn Acuna
USFWS – Heather Swinney, John DiGregoria, Denise Barnard, Morgan Gilbert, Shawn Sanders
UCD – Jim Hobbs, Nicole Aha
ESA –Ramona Swenson
BOR – Ian Smith
Stillwater Sciences – Megan Keever (phone)
H.T. Harvey & Assoc – Pete Nelson (phone)

I. Introductions/Housekeeping (10 min)
    a. Review of meeting notes – April 2017
    b. Agenda changes?
II. Restoration project updates (~1.5 hrs)
    a. Dutch Slough (Patty Finfrock, DWR)
        i. This plan is part of the Delta Levees program, which has a mandate for "net ecosystem improvement". It is not mitigation, so does not target any species in particular.
        ii. The property has been grazing land the past 100 years
            1. The purpose of this project is to turn this land back to tidal wetland

iii. Goals: Enhance habitat for native species, contribute to scientific understanding of ecological restoration, and provide shoreline access, educational, and recreational opportunities.
iv. Project has all permits, except ITP.
v. Since the project plans to restore this land at different elevations (mostly low and mid marsh type habitats), it makes for a good study comparison.
vi. Anticipating construction in 2018, tule cultivation on 2 parcels in 2019, breaching parcels in 2020/2021, and begin grading on the Burroughs parcel in 2020.
vii. There is an adaptive management plan, including monitoring fish and birds, but no funding to do this work.

b. Tule Red (Ramona Swenson, ESA)
   i. This is a Fish Restoration Project tidal wetland restoration site.
   ii. This site will have three ponds in the south that will be periodically connected to the rest of the wetland.
   iii. Add on studies such as EDNA may be helpful, some samples have already been collected by ESA and Cramer Fish Sciences.
   iv. Some pre-project information has been collected on aquatic invertebrates, fish, and vegetation.
   v. Some *Phragmites* treatment is planned.
   vi. SFCWA is looking for other special studies. This is an ideal "playground" to learn about wetland restoration, particularly flux, since the site will only have a single outlet. Contact Ramona or Laura Valoppi (SFCWA) if you are interested.

c. Hill Slough (Melissa Riley, CDFW)
   i. All permitting is completed except for BCDC.
   ii. Raising Grizzly Island Road should occur this winter.
   iii. Internal work – levees being lowered would begin in 2018
   iv. ~500 acres of tidal wetland will be created.

v. Monitoring:
    1. Suisun Salt Harvest Marsh Mouse populations are low this year probably due to high flows, but the mice caught appeared to be fat.
    2. 100 Western Pond Turtle have been marked and the Suisun Marsh group is hoping to put radio transmitters on them to see how they use the site.

d. Winter Island (Phillip Poirier, CDFW)
    i. The island is 580 acres and managed as a duck club right now.
    ii. There are 3 alternatives that were chosen for modeling.
    iii. A technical review will occur next month for suggestions on design.

e. Other FRP Projects (Dan Riordan, DWR)
    i. Prospect Island
        1. A 404 application has been submitted.
        2. Hoping to begin construction in 2018.
        3. Anticipating breaching in 2020.
    ii. Decker Island
        1. This project is on hold
    iii. Bradmoor Island and Arnold Slough
        1. Anticipated breaching in 2020.
        2. Arnold Slough design is in flux and may be connected to Blacklock.
    iv. Yolo Flyway Farms
        1. Contracts are in place.
        2. Construction to begin in 2018.
    v. Wings Landing
        1. Design is at the conceptual level.
        2. Construction to begin 2021.
        3. UC Davis (Moyle/Durand lab) has been conducting special studies on the site and in the region.

III. Conceptual Model Update (10 min)

a. The report is currently being styled and should be published online next week.

IV. Monitoring Framework Update (5 min)
   a. The framework is being completed.
      i. It consists of 2 volumes, where volume 1 is the generalized monitoring plans and volume 2 are the associated standard operating procedures.

V. Suisun Marsh Chinook growth study (Nicole Aha, UCD, 15 min)
   a. Objective – explore how different environmental drivers and food resources in discrete habitats affect salmon growth.
   b. Locations – Sheldrake Slough (leveed slough), First Mallard Slough (historic marsh), Wings Landing Duck Club brood pond (managed wetland)
      i. Parameters taken at each site – water quality, Chl a, and zooplankton. Chinook Salmon were placed in cages and measured and weighed every two weeks for two months. Macroinvertebrates were estimated.
      ii. Wings landing has a brood pond and high residence time.
      iii. Slough sites showed slower growth but the outlet of the Wings Landing site had high growth rate for Chinook Salmon.
      iv. Wings landing outlet fish grew the best and appears to have higher abundances of *Daphnia pulex.*
      v. Temperatures at Wings Landing were cooler than other sites and the temperatures did not fluctuate as much.
      vi. DO was lower in Wings Landing. Turbidity was lower at the outlet, while primary productivity was higher at the inlet.

VI. Longfin Smelt studies (Jim Hobbs, UCD, 30 min)
   a. Overall goal to identify the mechanism behind the relationship of recruitment and flow. Potential factors:
      i. Physical forcing (gravitational circulation, transport to favorable habitat, reduced entrainment)
      ii. Food web (increased food, decreased competition)

iii. Habitat/water quality (increased low salinity area/volume, overlap of LSZ with shoals and complex habitat, decrease in contaminant concentration)

b. Evidence of Longfin use of marshes: Found Longfin Smelt in Alviso Marsh (South Bay) during cooler months, Grimaldo et al. documented larvae in marshes elsewhere.

c. Otolith chemistry indicates most successful (surviving to adulthood) larval Longfin Smelt reared in 1-4 ppt, but larvae occur in wider range of salinities.

d. Questions:

i. Do Longfin Smelt spawn in tributaries to the SFE? (Napa, Petaluma, Coyote) Answer: Maybe

ii. Do Longfin Smelt recruit from tributaries?

1. Are densities similar to the bay? Density: Yes, Abundance: No

iii. Is recruitment from tributaries an underlying mechanism for the flow-abundance trend?

e. Longfin Smelt use and appear to spawn in tidal wetland habitat.

f. Jim is still working on growth rates estimates in the tribs, and attempting to develop an isotopic signature.

VII. Flux studies Little Holland Tract (Matt Young, USGS, 15 min).

a. Their group is looking at fluxes of sediments and nutrients, primary/secondary productivity, hydrology, and fish in Little Holland Tract and Wildlands.

b. They are using ADCPs, ARIS sonar cameras, zooplankton trawls, phytoplankton grab samples, water quality transects, and drifters.

c. Their goal is to compare flux of material from a shallow, open-water site (Little Holland), to a more reticulate tidal channel system (Wildlands).

d. No results yet, but they are collecting lots of good data.